

NOTES ON COLEOPTERA.—No. 9.

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Philydrus, CAN. ENT., XVI., 186.—The paragraph commencing with "*Philhydrus*" should be corrected as follows:—*Philydrus perplexus*, Lec., and *P. Hamiltoni*, Horn, are found [on Brigantine Beach] in the fresh water pools which form at the base of the sand-hills, with *Hydrophilus glaber* and *Copelatus glyphicus*; while *Philydrus reflexipennis* occurs in the salt marshes under pieces of wood and recent tide-drift, seeming to inhabit salt or very brackish water, as it has not been taken in fresh water with the species mentioned. When the paragraph was penned *P. Hamiltoni*, since described, was supposed to be *reflexipennis*, and the true *reflexipennis* a variety of *ochraceus*.

Philydrus fimbriatus, CAN. ENT., XX., 63.—The variety noticed as inhabiting hill and mountain rivulets has recently been described as a species, and is *Cymbiodyta Blanchardi*, Horn.

Cercyon littoralis, Gyll.—This nice species occurred very abundantly in September at Longport, near Atlantic City, New Jersey. It inhabits under the softer grass washed from the Bay deposited on sand flats, and which has remained there long enough for breeding purposes. Though represented as very variable in colour and markings, the only differences observed in several hundred individuals examined was that about one half were entirely piceous black, while the remainder had the posterior fourth of the elytra pallid. *Cercyon* has heretofore been much neglected by most American collectors, but the genus having been recently monographed by an able hand, and the species defined by characters usually of easy observation, they are likely to become better known. All things considered, this species seems to be native in North America as well as in Europe. Here it has been taken on Magdalen Island, Gulf of St. Lawrence; Coney Island, New York; the New Jersey sea coast, and in Illinois (Horn, monograph). In Europe, skirting the Western Mediterranean shores, it follows the Atlantic Coast to N. Lat. 66° 50', and also occurs in Northern Asia on the shores of the Obi. The *Cercyons*, so far from being despicable, are very interesting beetles, and no genus of equal extent contains so many forms common to the Old and New Worlds. In fact, of the 25 American species monographed by Dr. Horn, 14 likewise occur in Europe.

Trogophloeus convexulus, Lec. — Several examples (it occurred abundantly) of this minute beetle were taken on the salt marshes near

Longport, New Jersey, in September. The identification is due to Mr. H. Ulke, confirmatory of a like diagnosis by myself. The most, or indeed all of the species of *Trogophloeus* which I have heretofore taken, occur wandering about in very wet places, taking refuge under leaves, sticks, &c.; but the present species differs in being found in places comparatively dry, and in constructing surface galleries like many of the species of *Bledius*, some of which it closely resembles. Dr. Leconte described the species from an individual from New York, and another from Kansas, which, till the present time, do not appear to have been duplicated. These two examples, measuring each .07 inch in length, represent the smallest individuals; the length of a number taken together averaging over .09 inch. There are no thoracic impressions whatever visible in the great majority of individuals, but occasionally one of the larger ones bears indistinct traces of the usual basal marks, barely discernible in certain lights. The smooth thoracic line is usually conspicuous, which, with the piceous or black antennæ and parti-coloured feet, make this species of easy recognition. This species likewise occurred on Brigantine Beach, and may be looked for in the salt marshes anywhere along the Atlantic Coast.

Callichroma splendidum, Lec.—This well-known and highly-prized beetle is distributed along the Atlantic coast from Delaware to Key West, Florida, around the Gulf of Mexico to Southwestern Texas, and northward along the Mississippi to Arkansas. It is known to breed in the trunk and immense roots of a tree growing in the Southern swamps, especially in such as sustain Cypress, and is known in different places by such names as Sour Tupelo, Large Tupelo, Wild Olive, Wild Lime, Gum-Elastic Tree, &c., being the *Nyssa uniflora*, Walt., congeneric with *N. multiflora*, Weng., the abundant and well-known Gum Tree, or Pepperidge, common in many of the Northern States. The leaves and fruit of this tree, with several of its brilliant inhabitants, were recently received from Alabama, by which I am able to confirm the one or two observed records of its larval habits. It may, however, breed in other species of trees, as the first example in my collection was presented by a young naval surgeon, who took it on Key West, Florida, a place where *Nyssa* probably does not grow. The individuals of this species vary considerably in size, the sculpture of the thorax, and the colour of the elytra. An individual from Delaware measures .85 inch in length; the one from Key West and another from Texas 1.70 inch each, but the average

appears to be near 1.30 inch. The colour of the thorax is uniformly a brilliant fiery copper, with green reflections when seen after night or in certain lights, and is a specific character; the thorax differs in individuals from being deeply rugous to comparatively smooth, and in the prominence of the lateral spines and tuberosities. The elytra in the large majority are deep sericeous green, but in some examples, more or less shot with copper, which in some individuals becomes the prevailing colour, known in some collections as *virescens*.

Some time ago I had an opportunity to examine several examples of each of two species of *Callichroma* taken in Cuba, one of which, labelled *columbina*, Dej., seems only to differ from *splendidum* by having the thorax colored coppery bluish or violet; if other differences exist they escaped observation.

This species was described very briefly by Dr. Leconte under Dejean's catalogue name *splendidum*, with *Cerambyx elegans*, Fab., Oliv., Hald., in synonymy (Jour. Acad. Nat. Sci., Phil., 2d Ser., II., 37). Dr. Asa Fitch, however, states (Rep. 4, 711,) that Linnæus had previously described it under the name *suaveolens*, from an example sent him from Carolina by Dr. Garden. (Appendix to last Ed. Syst. Nat., III., 224, 1770.) At one time this species was considered an inhabitant of the West India Islands, being probably mistaken for *columbina* or some allied species. In fact, some of the species of *Callichroma*, of which I have seen nine, are uncomfortably close, and separated by characters which, in many genera, are of little moment.

C. plicatum, Lec., is strikingly like *splendidum*, but the green colour of the head and thorax is constant and devoid of any coppery reflections. The habits of the two species, if I am rightly informed, are more confirmatory of their being specifically different than anything yet observed in their external structural characters. A friend (not an entomologist), from Hamilton County, Central Texas, says this species breeds in old cactus. While requiring further confirmation, this statement is probably correct, from the fact that there has been no record observed of its having been taken in swamps with *splendidum*, and from the fact that it occurs only in cactus regions in Texas to Arizona, where it was taken near the south-eastern boundary at Camp Bowie. (Wheeler's Reports on Exp. and Surv., Vol. V., Zoology, p. 821.)

Eupogonius tomentosus, Hald.—Here this species is not common;

till recently all the examples in my collection were bred from dead hickory limbs (once). All other observed records of its habits represent it as inhabiting in its early stages pines. This is with scarcely a doubt the species Dr. Fitch describes under the name "*E. pinivora*, Pine-eating Gay-beard" (Rep. iv., 712), which he says differs from *E. tomentosus* by the erect hairs on the body and antennæ being black, a different form of spots on the elytra and the smaller size. The last two are of no value, as the length of *tomentosus* varies from .20 inch to .33 inch, and the elytra from having scarcely perceptible patches of pubescence to the high ornamentation of Dr. Fitch's *pinivora*, while the black colour of the erect hairs was very probably an optical deception, from a perhaps careless comparison of bright fresh examples with older faded ones; any one who has the insect can readily see how this might occur, by examining a specimen after night, or by a dull light. This species is distributed from Florida to Canada, occurring in New York and Michigan. The locality from which the hickory limbs from which my examples were bred were obtained is remote from any place growing pine, and the occurrence can scarcely be regarded as fortuitous. *E. vestitus* is very commonly bred here from hickory.

Elleschus, CAN. ENT., XVI., 106.—The *Elleschus bipunctatus*, mentioned at the place cited, proves to be one of the forms of *E. scanicus*, Payk., as determined by Dr. W. G. Dietz on comparison with authenticated European examples. The colour and the elytral markings of this species seem to be locally variable, and in the present instance scarcely or not differing from those of *bipunctatus*. This form has been sent me from Europe as *bipunctatus*, but an examination of the structural characters shows it to be the same as my American form. The typical form of Paykull was rufo-testaceous with fasciate elytra, and a similar form was taken by Dr. Dietz at Hazleton, Pennsylvania, from which a redescription of the species was made and a figure drawn (Tr. Am. Ent. Soc., 18, 264, plate vii., fig. 35, 35a). As he had not then seen this form it is not mentioned in Dr. Dietz's excellent paper, and from his description and figure of the species it would not be readily recognized as the same. Some individuals have no markings whatever, not even a trace, and all others have, more or less visible, the small spot on the disk of the elytra before mentioned, any others being attributable to abrasion. The colour varies from piceous to pale. This species is only known from here, and at Hazleton certainly. Common throughout Europe on willow.

Dr. Dietz records *E. bipunctatus* as occurring in Canada ; Hubbard and Schwarz, in Northern Michigan.

Anthonomus musculus, Say, and *A. signatus*, Say.—In 1831 Say published in his *Curculio*, p. 15, a description of *A. musculus*, and on p. 25 that of *A. signatus*, and from the descriptions it is evident he had before him two distinct species. In Leconte and Horn's *Rhyncophora*, a species is assigned to each name separated by definite characters ; and in Dr. W. G. Dietz's elaborate revision of the tribe lately published, these are still more clearly defined. One of these species is of economic importance, being occasionally exceedingly destructive to the cultivated strawberry. Owing to the difficulties encountered in attempting to separate them, some economic entomologists now solve the matter by uniting the species, unfortunately, under the name of the one having typographical precedence—*musculus*. Prof. C. V. Riley devotes several pages in one of the Government agricultural reports (1885, p. 276–282,) to the discussion.

The true *musculus* is not very common here, and is usually found in colonies on huckleberry blossoms—I have never taken a specimen on anything else—and occurs here from the middle of May till the first of June. Whole acres may be hunted over without obtaining a single specimen. The individuals seem to vary only from degrees of maturity, Say's description having been drawn from examples recently disclosed, while his variety is the more mature. *A. signatus*, on the other hand, is protean in colour and elytral ornamentation, so much so that judged by this alone it might be divided into several species. It appears about the first of June, and may be found more or less abundantly all summer. It eats the leaves and blossoms of many species of trees and shrubs. I have taken it abundantly on *Tilea* and *Rhus*, and it seems to have a decided taste for certain *Rosaceæ*—notably, *Rubus*.

Diligent search has several times been made in the fields of the cultivated strawberry without finding any *Anthonomus*, and efforts to obtain the strawberry form from correspondents have equally failed. *A. signatus*, however, is often seen on the leaves of the wild strawberry, through which it eats holes like it does to the leaves of *Rubus*. Both species may possibly depredate in strawberry plantations, but it would be a wide departure for the true *musculus* from any of its known habits.

From the unanimity of systematists in maintaining the distinctness of the species, it will be necessary for economic entomologists, if they care

for accuracy, to make further investigation and ascertain which it is by which the mischief is done, or whether both species may not be concerned in different places. There will be little trouble in doing this, provided the huckleberry insect can be found with which to make the comparison, as they are only moderately difficult to separate when both forms are at hand.

NOTES ON THE ÆGERIADÆ OF CENTRAL OHIO.

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The Lepidopterous family to which these notes pertain is a homogeneous and distinct one, clearly and sufficiently separated from other families. The larvæ, so far as known, are borers in roots, stems, branches, or excrescences of trees, shrubs or annuals, yet all strictly retain the structure and appearance of the young of their order. Most of them pass the winter buried in the food plant. A few, however, hibernate as pupæ or as larvæ, protected by cocoons. The most remarkable variation of the adolescent period is in the variable length of time from egg to pupa. Certain wood-boring species, *Harmonia pini* for example, pupate and disclose the imago the third year from the egg; others complete their changes in a few weeks. The pupæ are quite similar. The clypeus is usually armed with a protuberance, and the abdominal rings with transverse rows of spines, agreeing in this respect with normal pupæ of Tortricidæ, Cossidæ and Hepialidæ.

The moths are among the most beautiful of insects, and in other ways they are no less attractive. Their exquisite form, coloration and gracefulness of motion appeal to every one permitted to see them, but the highest enjoyment is reserved for those who appreciate the extent and exactness of *protective mimicry* exhibited by these insects. So intimately do they simulate the appearance, aided many times by sounds, odours and attitudes of wasps and bees, that the very elect in entomology are often deceived and cheated. Again, their habits render many of them grave pests, compelling attention from horticulturist and economic entomologist.

In spite of these reasons, and more that might be alleged for their collection and study, they are not well represented in collections. In fact, in a majority of collections which I have had the pleasure to examine Ægeriadæ, like Odonata, are few and ill-favoured. This is to be regretted; but since we have the material in abundance, the defects may